

Attorney Docket No. SIC-04-021

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re reissue application of:

KANJI KIRIMOTO, et al

Application No.: 10/826,173

Filed: April 16, 2004

For: CABLE DISK BRAKE

Examiner: Thomas J. Williams

Art Unit: 3683

APPEAL BRIEF

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Commissioner:

This is an appeal brief for the above-captioned matter.

**I. Real Party In Interest**

The assignee and real party in interest is Shimano, Inc., a Japanese corporation having a principal place of business in Osaka, Japan.

**II. Related Appeals And Interferences**

There are no prior or pending appeals, interferences or judicial proceedings known to the appellant, to appellant's legal representative, or to the assignee which may be related to, directly affect, or be directly affected by, or have a bearing on the Board's decision in the pending appeal.

**III. Status Of Claims**

Claims 37-60 and 69-74 are pending under final rejection and are under appeal. Claims 1-36, 61, 63-65, 67 and 68 are allowed, and claims 62 and 66 have been canceled.

**IV. Status Of Amendments**

No amendment was filed subsequent to final rejection.

**V. Summary Of Claimed Subject Matter**

The application discloses an apparatus for a cable disk brake. Cited reference numbers and text are examples only and are not intended to be limiting.

As applied to independent claim 37, a cable disc brake ((12a), Fig. 5, column 6, lines 13-16) for a bicycle comprises:

a caliper housing ((30), Fig. 5, column 6, lines 13-16) with a mounting bracket ((43), Fig. 7, column 6, lines 41-43) structured and dimensioned to be attached to a bicycle (as shown in Fig. 2) and with a cable support ((44), Figs. 5 and 7, column 6, lines 41-43) having an opening ((72), Fig. 7, column 7, lines 37-39) for guiding a cable ((25a), Figs. 2 and 5, column 5, lines 55-62, column 10, lines 34-37) therethrough;

wherein the cable support (44) extends from a surface of the caliper housing (30) (at body portion (42) as shown in Fig. 7) and is not adjustable in any direction relative to the surface of the caliper housing (because, for example, body portion (42) and cable support (44) are one piece as clearly shown in Fig. 7 and described at column 6, lines 41-43);

a first friction member (left side (32), Fig. 6, column 6, lines 13-16) coupled to the caliper housing (30) for movement between a release position and a braking position (column 6, lines 21-24);

a second friction member (right side (32), Fig. 6, column 6, lines 13-16) coupled to the caliper housing (30) and arranged substantially parallel to the first friction member (32) to form a rotor receiving slot therebetween (Fig. 5, column 6, lines 24-29); and

an actuated mechanism ((34, 36), Fig. 5, column 6, lines 16-19) movably coupled to the caliper housing (30) to move the first friction member (32) in an axial direction from the release position towards the second friction member (32) to the braking position (column 6, lines 16-19);

wherein the actuated mechanism (34, 36) comprises an elongated actuating arm ((98), Figs. 5 and 44, column 10, lines 17-22) rotatably coupled to the caliper housing (30) to cause the actuated

mechanism (34, 36) to move the first friction member (32) from the release position towards the braking position (column 11, lines 12-30);

wherein the actuating arm (98) has a curved guide surface ((98i), Fig. 44) with a first portion coincident with a cable clamp ((103, 104), Fig. 4, column 10, lines 34-37) and a second portion (curved tip, Fig. 4, unnumbered) that extends from the first portion towards the cable support (44) so that the cable (25a), when coupled to the cable clamp (103, 104), approaches the guide surface (98i) from the opening (72) in the cable support (44) essentially tangent to the guide surface (98i) and is supported by the guide surface (98i) when the first friction member (32) is in the release position (shown in Figs. 2 and 4).

To facilitate review, claim 72 is identical to claim 37 except for the substitution of “at any time” for “in any direction” in the second element. Claim 73 is identical to claim 37 except for the substitution of “removable” for “adjustable in any direction,” respectively, in the second element. Claim 74 is identical to claim 37 except claim 74 omits “in any direction” in the second element, and claim 74 adds “wherein the cable support is one piece with the surface of the caliper housing from which it extends.”

More specifically, as applied to independent claim 72, a cable disc brake ((12a), Fig. 5, column 6, lines 13-16) for a bicycle comprises:

a caliper housing ((30), Fig. 5, column 6, lines 13-16) with a mounting bracket ((43), Fig. 7, column 6, lines 41-43) structured and dimensioned to be attached to a bicycle (as shown in Fig. 2) and with a cable support ((44), Figs. 5 and 7, column 6, lines 41-43) having an opening ((72), Fig. 7, column 7, lines 37-39) for guiding a cable ((25a), Figs. 2 and 5, column 5, lines 55-62, column 10, lines 34-37) therethrough;

wherein the cable support (44) extends from a surface of the caliper housing (30) (at body portion (42) as shown in Fig. 7) and is not adjustable at any time relative to the surface of the caliper housing (because, for example, body portion (42) and cable support (44) are one piece as clearly shown in Fig. 7 and described at column 6, lines 41-43);

a first friction member (left side (32), Fig. 6, column 6, lines 13-16) coupled to the caliper housing (30) for movement between a release position and a braking position (column 6, lines 21-24);

a second friction member (right side (32), Fig. 6, column 6, lines 13-16) coupled to the caliper housing (30) and arranged substantially parallel to the first friction member (32) to form a rotor receiving slot therebetween (Fig. 5, column 6, lines 24-29); and

an actuated mechanism ((34, 36), Fig. 5, column 6, lines 16-19) movably coupled to the caliper housing (30) to move the first friction member (32) in an axial direction from the release position towards the second friction member (32) to the braking position (column 6, lines 16-19);

wherein the actuated mechanism (34, 36) comprises an elongated actuating arm ((98), Figs. 5 and 44, column 10, lines 17-22) rotatably coupled to the caliper housing (30) to cause the actuated mechanism (34, 36) to move the first friction member (32) from the release position towards the braking position (column 11, lines 12-30);

wherein the actuating arm (98) has a curved guide surface ((98i), Fig. 44) with a first portion coincident with a cable clamp ((103, 104), Fig. 4, column 10, lines 34-37) and a second portion (curved tip, Fig. 4, unnumbered) that extends from the first portion towards the cable support (44) so that the cable (25a), when coupled to the cable clamp (103, 104), approaches the guide surface (98i) from the opening (72) in the cable support (44) essentially tangent to the guide surface (98i) and is supported by the guide surface (98i) when the first friction member (32) is in the release position (shown in Figs. 2 and 4).

As applied to independent claim 73, a cable disc brake ((12a), Fig. 5, column 6, lines 13-16) for a bicycle comprises:

a caliper housing ((30), Fig. 5, column 6, lines 13-16) with a mounting bracket ((43), Fig. 7, column 6, lines 41-43) structured and dimensioned to be attached to a bicycle (as shown in Fig. 2) and with a cable support ((44), Figs. 5 and 7, column 6, lines 41-43) having an opening ((72), Fig. 7, column 7, lines 37-39) for guiding a cable ((25a), Figs. 2 and 5, column 5, lines 55-62, column 10, lines 34-37) therethrough;

wherein the cable support (44) extends from a surface of the caliper housing (30) (at body portion (42) as shown in Fig. 7) and is not removable relative to the surface of the caliper housing (because, for example, body portion (42) and cable support (44) are one piece as clearly shown in Fig. 7 and described at column 6, lines 41-43);

a first friction member (left side (32), Fig. 6, column 6, lines 13-16) coupled to the caliper housing (30) for movement between a release position and a braking position (column 6, lines 21-24);

a second friction member (right side (32), Fig. 6, column 6, lines 13-16) coupled to the caliper housing (30) and arranged substantially parallel to the first friction member (32) to form a rotor receiving slot therebetween (Fig. 5, column 6, lines 24-29); and

an actuated mechanism ((34, 36), Fig. 5, column 6, lines 16-19) movably coupled to the caliper housing (30) to move the first friction member (32) in an axial direction from the release position towards the second friction member (32) to the braking position (column 6, lines 16-19);

wherein the actuated mechanism (34, 36) comprises an elongated actuating arm ((98), Figs. 5 and 44, column 10, lines 17-22) rotatably coupled to the caliper housing (30) to cause the actuated mechanism (34, 36) to move the first friction member (32) from the release position towards the braking position (column 11, lines 12-30);

wherein the actuating arm (98) has a curved guide surface ((98i), Fig. 44) with a first portion coincident with a cable clamp ((103, 104), Fig. 4, column 10, lines 34-37) and a second portion (curved tip, Fig. 4, unnumbered) that extends from the first portion towards the cable support (44) so that the cable (25a), when coupled to the cable clamp (103, 104), approaches the guide surface (98i) from the opening (72) in the cable support (44) essentially tangent to the guide surface (98i) and is supported by the guide surface (98i) when the first friction member (32) is in the release position (shown in Figs. 2 and 4).

As applied to independent claim 74, a cable disc brake ((12a), Fig. 5, column 6, lines 13-16) for a bicycle comprises:

a caliper housing ((30), Fig. 5, column 6, lines 13-16) with a mounting bracket ((43), Fig. 7, column 6, lines 41-43) structured and dimensioned to be attached to a bicycle (as shown in Fig. 2) and with a cable support ((44), Figs. 5 and 7, column 6, lines 41-43) having an opening ((72), Fig. 7, column 7, lines 37-39) for guiding a cable ((25a), Figs. 2 and 5, column 5, lines 55-62, column 10, lines 34-37) therethrough;

wherein the cable support (44) extends from a surface of the caliper housing (30) (at body portion (42) as shown in Fig. 7) and is not adjustable relative to the surface of the caliper housing

(because body portion (42) and cable support (44) are one piece as clearly shown in Fig. 7 and described at column 6, lines 41-43);

wherein the cable support (44) is one piece with the surface of the caliper housing (30) from which it extends (clearly shown in Fig. 7);

a first friction member (left side (32), Fig. 6, column 6, lines 13-16) coupled to the caliper housing (30) for movement between a release position and a braking position (column 6, lines 21-24);

a second friction member (right side (32), Fig. 6, column 6, lines 13-16) coupled to the caliper housing (30) and arranged substantially parallel to the first friction member (32) to form a rotor receiving slot therebetween (Fig. 5, column 6, lines 24-29); and

an actuated mechanism ((34, 36), Fig. 5, column 6, lines 16-19) movably coupled to the caliper housing (30) to move the first friction member (32) in an axial direction from the release position towards the second friction member (32) to the braking position (column 6, lines 16-19);

wherein the actuated mechanism (34, 36) comprises an elongated actuating arm ((98), Figs. 5 and 44, column 10, lines 17-22) rotatably coupled to the caliper housing (30) to cause the actuated mechanism (34, 36) to move the first friction member (32) from the release position towards the braking position (column 11, lines 12-30);

wherein the actuating arm (98) has a curved guide surface ((98i), Fig. 44) with a first portion coincident with a cable clamp ((103, 104), Fig. 4, column 10, lines 34-37) and a second portion (curved tip, Fig. 4, unnumbered) that extends from the first portion towards the cable support (44) so that the cable (25a), when coupled to the cable clamp (103, 104), approaches the guide surface (98i) from the opening (72) in the cable support (44) essentially tangent to the guide surface (98i) and is supported by the guide surface (98i) when the first friction member (32) is in the release position (shown in Figs. 2 and 4).

#### VI. Grounds of Rejection to be Reviewed on Appeal

Claims 37-60 and 69-74 stand rejected under 35 U.S.C. §251 as being improperly broadened in a reissue application.

Claims 37-43, 47-54 and 69-74 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Le Deit, et al (U.S. Patent No. 5,647,475) in view of Carre, et al (U.S. Patent No. 4,582,177) and Huang (U.S. Patent No. 6,148,964).

Claims 55-59 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Le Deit, et al in view of Carre, et al, Huang, and Isai (U.S. Patent No. 5,960,914).

Claim 60 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Le Deit, et al in view of Carre, et al, Huang, Isai, and Mott (U.S. Patent No. 5,201,402).

## VII. Argument

### Rejection under 35 U.S.C. §251

#### Claims 37-60 and 69-74

Claims 37-60 and 69-74 stand rejected under 35 U.S.C. §251 as being improperly broadened by attempting to recapture previously surrendered subject matter. The final office action dated September 28, 2007 takes the position that the deletion of limitations pertaining to the interior of the actuating mechanism constitutes improper recapture of subject matter surrendered during the prosecution of the patent application that resulted in the issuance of U.S. Patent No. 6,557,671 B1 (hereinafter ‘the ‘671 patent), the patent that is the subject of this reissue application.

Claims 37-60 and 69-74 of this reissue patent are directed to an invention that is distinct from the invention recited in claims 1-36 of the ‘671 patent. Claims 1-36 of the ‘671 patent are directed to a bicycle disc brake apparatus that uses a unique cam mechanism to move the brake pads between a brake releasing position and a braking position. By contrast, claims 37-60 and 69-74 of this reissue application are directed to a bicycle disc brake apparatus that uses a unique actuating arm to control the remainder of the actuating mechanism. Such an invention qualifies for independent patent protection regardless of the details of the interior of the actuating mechanism.

To understand the examiner’s position, it can be seen that claim 1 in the originally-filed application that resulted in the ‘671 patent recited an actuating mechanism ‘having first and second

cam members movably arranged between an axially retracted position and an axially extended position with a guide member interconnecting said first and second cam members during movement between said axially retracted position and said axially extended position.”

During prosecution, the first and second cam members were amended to have the form recited in issued claim 1:

“an input cam movably mounted within said caliper housing to move in a rotational direction about a longitudinal axis, but not in an axial direction, said input cam having a first camming surface with an axially extending guide member non-movably fixed thereto at said longitudinal axis, and

an output cam movably mounted within said caliper housing to move in the axial direction in response to rotation of said input cam, but not in the rotational direction, said output cam having a second camming surface with an axially extending bore, said guide member being at least partially disposed within said bore to ensure smooth relative movement between said input and output cams.”

Independent claims 37 and 72-74 in this reissue application omit the input and output cams entirely. The focus of independent claims is on the details of an elongated actuating arm rotatably coupled to the caliper housing to cause the actuating mechanism to move one of the friction members from a release position towards a braking position.

Pursuant to 35 U.S.C. §251, a patentee may obtain reissue of a patent if the patent is, through error “without any deceptive intention, deemed wholly or partly inoperative or invalid, ... by reason of the patentee claiming more or less than he had a right to claim in the patent ... .” In considering the ‘error’ requirement, it must be keep in mind that the reissue statute is based on fundamental principles of equity and fairness, and should be construed liberally. *In re Weiler*, 790 F.2d 1576, 1579, 229 USPQ 673, 675 (Fed.Cir. 1986).

The recapture rule prevents a patentee from regaining, through reissue, subject matter that was surrendered during prosecution of the original patent in an effort to obtain allowance of the original claims. *Medtronic Inc. v. Guidant Corp.*, 465 F.3d 1360, 1373, 80 U.S.P.Q.2d 1558, 1566

(Fed.Cir. 2006). However, the recapture rule does not apply to distinct subject matter disclosed, but not claimed, in the original application. *See, e.g., Mentor. See, also, In re Murray*, 64 F.2d 788, 791 (C.C.P.A. 1933); *B.E. Meyers & CO. v. U.S.* 47 Fed.Cl. 200, 56 USPQ.2d 1110 (Fed.Cl. 2000).

Application of the recapture rule is a three-step process: (1) it is first determined whether, and in what respect, the reissue claims are broader in scope than the original patent claims; (2) next, it is determined whether the broader aspects of the reissue claims relate to subject matter surrendered in the original prosecution; and (3) finally, it is determined whether the reissue claims were materially narrowed in other respects, so that the claims may not have been enlarged, and hence avoid the recapture rule. *Medtronic*, 465 F.3d at 1373.

The final office action dated September 28, 2007 states, at page 3: “The replacement limitations are not related to the omitted limitations, therefore a recapture exists.” That simply is not the law. There is no requirement for the narrowing features to be related to the subject matter amended during prosecution of the original application.

Applying step (1) to the present case, independent claims 37 and 72-74 are broader in scope than the original patent claims in that they: (a) omit the input and output cams, together with the details of the cams, recited in independent claim 1 of the ‘671 patent; and (b) omit the first and second cam members, together with the details of the cam members, recited in independent claim 11 of the ‘671 patent. Applying step (2) to the present case, original claim 1 recited, *inter alia*, first and second cam members. None of the originally-filed claims omitted cam members, and the cam members were not added during prosecution to obtain allowance of the claims, so the broader aspects of the reissue claims do not relate to surrendered subject matter. In other words, there was never a “canceled claim” that included within its scope a cam-less brake device such that protection of a cam-less brake device was surrendered in view of prior art.<sup>1</sup>

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<sup>1</sup> In some case, not present here, deletion of an entire claim element may cause a claim to be anticipated by or rendered obvious in view of the prior art, but it is submitted that invalidity in such a case is based on the claim being too broad, not because of recapturing surrendered subject matter.

The *Meyers* case cited above is particularly instructive in that it has facts very similar to this case. In *Meyers*, the claims were directed to features of a night vision system. Each original claim included a pulsing circuit for a light-emitting diode (LED). During prosecution, the patentee distinguished over the prior art by amended the pulsing circuit to add two limitations: (1) that the circuit would pulse on and off at intervals that resulted in the LED being off more often than on; and (2) that the pulsing circuit, when on, would pulse at a substantially higher level of power than it would be able to sustain if left on continuously. In a subsequent reissue proceeding, the pulsing circuit, including the two added features, was deleted from the claims. In its place, the patentee substituted a lens system capable of forming the energy from a source of electromagnetic energy into a beam with a well defined peripheral edge. The U.S. Court of Federal Claims held that deletion of the pulsing circuit, together with the two features added to the pulsing circuit to distinguish over the prior art, did not constitute impermissible recapture. According to the Court, the patentee surrendered the right to receive patent protection for pulsing circuitry that did not include the features (1) and (2) added by amendment. More specifically, the Court held that a lens apparatus that produced a beam with a well-defined peripheral edge was a separate invention eligible for patent protection, independent of whatever type of pulsing circuitry might be used in combination with the lens system in any particular device.

The cited *Murray* case also is instructive. In *Murray*, the claims were directed to a rear axle housing for automobiles. As originally claimed, the housing included an annular wall with diametrically opposite openings. An axle tube extended into each opening, wherein each axle tube had an inner flange and an outer flange. The inner flange abutted against the interior of the annular wall, and the outer flange abutted against the exterior of the annular wall. The inner and outer flanges on the axle tubes appeared in the patent in amended form. In a subsequent reissue proceeding, the patentee presented an independent claim 3 that deleted the inner and outer flanges from the axle tubes and amended the annular member to include outward flanges that surrounded each of the diametrically opposite openings. The Court of Customs and Patent Appeals held that the claim was not subject to estoppel (recapture) because claim 3 “constitutes a distinct subject matter, disclosed, but not claimed, in the original application and patent.” *Murray*, 64 F.2d at 791-792.

Appellants submit that the present case, the *Meyers* case, and the *Murray* case can be understood by the following rules. First, if an originally-filed claim recites elements A + B + C, and if the claim is amended during prosecution to recite A + B + C + C', wherein C' is a feature of element C, then C' cannot be deleted in a reissue proceeding. That is the traditional rule illustrated by cases such as *In re Clement*, 131 F.3d 1464, 45 USPQ.2d 1161 (Fed.Cir. 1997). However, if an originally-filed claim recites elements A + B + C and is amended during prosecution to recite A + B + C + C', wherein C' is a feature of element C, then the claim may be amended in a reissue proceeding to delete C and C' and recite A + B + D, wherein D corresponds to narrowing features independent of element C. This latter rule is illustrated by this case, the *Meyers* case, and the *Murray* case. Like the patentees in the *Meyers* and *Murray* cases, the Appellants in this case are not attempting to recapture protection of A + B + C. The Appellants are attempting to protect a separate and independent invention A + B + D that was fully disclosed in the originally-filed application.

More specifically, the original claims recited “first and second cam members,” which can correspond to element “C” in the above example. During prosecution of the original patent, the first and second cam members were amended to include their respective input and output designations as well as the movement and camming surface features. The added features collectively can be called feature C'. If Appellants merely deleted the input and output designations as well as the movement and camming surface features and otherwise kept the two cam members, then the issue of recapture would arise. However, independent claims 37 and 72-74 canceled not just feature C', but element C (the two cams) as well. The recited details of the cable support and the actuating arm (equivalent to “D”) were added to protect an invention that is distinct from an invention that involves cams. As such, claims 37-60 and 69-74 are not subject to the recapture rule.

### Claim 37

Even if it could be said that the deletion of the details of the cam members causes the broader aspects of claim 37 to relate to subject matter surrendered in the original prosecution, claim 37 has been amended to recite “wherein the cable support extends from a surface of the caliper housing and is not adjustable in any direction relative to the surface of the caliper housing ... wherein the actuating arm has a curved guide surface with a first portion coincident with a cable clamp and a

second portion that extends from the first portion towards the cable support so that the cable, when coupled to the cable clamp, approaches the guide surface from the opening in the cable support essentially tangent to the guide surface and is supported by the guide surface when the first friction member is in the release position.” These features cause claim 37 to recite a distinct invention and therefore materially narrow claim 37 to avoid the recapture rule according to step (3).

**Claim 72**

Even if it could be said that the deletion of the details of the cam members causes the broader aspects of claim 72 to relate to subject matter surrendered in the original prosecution, claim 72 has been amended to recite “wherein the cable support extends from a surface of the caliper housing and is not adjustable at any time relative to the surface of the caliper housing … wherein the actuating arm has a curved guide surface with a first portion coincident with a cable clamp and a second portion that extends from the first portion towards the cable support so that the cable, when coupled to the cable clamp, approaches the guide surface from the opening in the cable support essentially tangent to the guide surface and is supported by the guide surface when the first friction member is in the release position.” These features cause claim 72 to recite a distinct invention and therefore materially narrow claim 72 to avoid the recapture rule according to step (3).

**Claim 73**

Even if it could be said that the deletion of the details of the cam members causes the broader aspects of claim 73 to relate to subject matter surrendered in the original prosecution, claim 73 has been amended to recite “wherein the cable support extends from a surface of the caliper housing and is not removable relative to the surface of the caliper housing … wherein the actuating arm has a curved guide surface with a first portion coincident with a cable clamp and a second portion that extends from the first portion towards the cable support so that the cable, when coupled to the cable clamp, approaches the guide surface from the opening in the cable support essentially tangent to the guide surface and is supported by the guide surface when the first friction member is in the release position.” These features cause claim 73 to recite a distinct invention and therefore materially narrow claim 73 to avoid the recapture rule according to step (3).

**Claim 74**

Even if it could be said that the deletion of the details of the cam members causes the broader aspects of claim 74 to relate to subject matter surrendered in the original prosecution, claim 74 has been amended to recite “wherein the cable support extends from a surface of the caliper housing and is not adjustable relative to the surface of the caliper housing; wherein the cable support is one piece with the surface of the caliper housing from which it extends … wherein the actuating arm has a curved guide surface with a first portion coincident with a cable clamp and a second portion that extends from the first portion towards the cable support so that the cable, when coupled to the cable clamp, approaches the guide surface from the opening in the cable support essentially tangent to the guide surface and is supported by the guide surface when the first friction member is in the release position.” These features cause claim 74 to recite a distinct invention and therefore materially narrow claim 74 to avoid the recapture rule according to step (3).

**Rejection under 35 U.S.C. §103(a) over Le Deit, et al in view of Carre, et al and Huang.**

**Claims 37, 41-42, 47-54, and 70-71.**

Claim 37 recites “wherein the cable support extends from a surface of the caliper housing and is not adjustable in any direction relative to the surface of the caliper housing.”

The final office action, on page 4, takes the position that Le Deit, et al shows only one optimal position for a cable support (44). Consequently, according to the office action, cable support (44) is not adjustable in any direction relative to the caliper housing, for otherwise the cable support would be removed from this optimal position.

The suffix “-able” means “having capability.” In *Dorel Juvenile Group, Inc. v. Graco Children’s Products, Inc.*, 429 F.3d 1043, 77 USPQ.2d 1090 (Fed. Cir. 2005), the Court of Appeals for the Federal Circuit held that the definition of “removably attached” and “removably secured” as applied to the seat and base of a juvenile car seat means “designed at some time or another to come apart.” The Court also expressly rejected the argument that two parts screwed together are not “removably attached” to each other. The Appellants adopted the Court’s rationale and provided

express definitions of the terms “removable” and “adjustable” in the Response to Office Action filed on July 9, 2007. Insofar as “removable” means “designed at some time or another to come apart,” the term “adjustable” in the relevant claims means “designed at some time or another to be adjusted.” Thus, it cannot be maintained that the Le Deit, et al cable support is not adjustable or removable simply because it is screwed together as shown in the drawings of the patent. Furthermore, it cannot be said that once an optimum position is found the position cannot be altered even when circumstances change. It is the capability, not the intent at any fixed point in time, which matters. Two things screwed together are designed to be removed or adjusted as long as they have the capability of being removed or adjusted. Whether or not they are actually removed or adjusted, or whether such removal or adjustment is desirable at any particular time, is irrelevant. As noted in *Dorel*, “the claim language does not require that the seat and base come apart during normal use.” *Id.* 429 F.3d at 1045, 77 USPQ.2d at 1092.

Furthermore, the recesses along slot (56) in the Le Deit, et al device only set the desired *rotational* position of cable support (44). Nothing prevents the adjustment of cable support (44) in the direction of the rotational axis. In other words, screw (60) could be loosened or removed, and then washers or shims could be placed beneath cable support (44), thereby adjusting the position of cable support (44) upwardly from the page. The fact that Le Deit, et al does not expressly discuss such an adjustment does not make such adjustment impossible or undesirable.

### **Claim 38**

Claim 38 recites a cable supported on and by a protuberance. Neither Le Deit, et al, Carre, et al nor Huang disclose or suggest a projection that forms a circumferentially *elongated* protuberance that points in a rotational direction of the actuating arm towards the cable support where the cable passes through the cable support so that the cable is supported on and by the protuberance. The Appellants previously set forth an express definition of “protuberance” in the Response to Office Action filed April 26, 2007. A protuberance is defined for the purpose of the claims as a structure that bulges out beyond the surrounding surface, and such is not the case in the cited references.

The final office action states, at page 5, that figure 6 of Carre, et al shows a slight cable protuberance at the cable exit portion of the member (50). Appellants submit that no protuberance is shown or intended by Carre, et al. At most, the draftsperson inadvertently drew an unevenly thick line as he or she drew the curved portion of the member (50). There is no basis to believe that a protuberance was intended, and certainly not an elongated protuberance as recited in claim 38.

**Claim 39**

Neither Le Deit, et al, Carre, et al nor Huang discloses or provides a motivation to form a projection that has a radially outer portion that extends towards the cable support and a radially inner portion that extends away from the cable support back towards a side surface of the actuating arm.

**Claim 40**

Neither Le Deit, et al, Carre, et al nor Huang discloses or provides a motivation to form such a projection disposed in close proximity to a radially outermost portion of the actuating arm.

**Claim 43**

Claim 43 was included in this basis for rejection, but claim 43 was not discussed. According to the paragraph bridging pages 11-12 of the office action, claim 43 is no longer rejected based on prior art. Accordingly, it is believed that the inclusion of claim 43 in the obviousness rejection was a clerical error. In any event, neither Le Deit, et al, Carre, et al, nor Huang provide a motivation to provide an adjusting mechanism that adjusts the biasing force applied between the caliper housing and the actuating arm in addition to changes of biasing force caused by rotation of the actuating arm relative to the caliper housing.

**Claim 47**

Neither Le Deit, et al, Carre, et al nor Huang discloses or provides a motivation to include a cable adjusting bolt fitted within the opening in the cable support through which the cable passes.

**Claim 69**

As for claim 69, the final office action states, at page 6, that once Le Deit, et al's cable support (44) is immobilized, then it is broadly interpreted as being one with the caliper housing. Appellants submit that one piece means one piece. One piece does not mean two pieces bolted together, nor is such an interpretation reasonable.

**Claim 72**

Claim 72 recites "wherein the cable support extends from a surface of the caliper housing and is not adjustable at any time relative to the surface of the caliper housing." The final office action takes a "frozen in time" interpretation of Le Deit, et al at pages 7 and 8 of the office action in that only the state of the Le Deit, et al structure as it appears in the drawings is taken into account. Therefore, since the drawings show bracing piece (44) in a fastened state, bracing piece (44) is not adjustable at any time.

As noted above, the term "adjustable" in the relevant claims means "designed at some time or another to be adjusted." Thus, it cannot be maintained that the Le Deit, et al cable support is not adjustable or removable simply because it is screwed together as shown in the drawings of the patent. Furthermore, it cannot be said that once an optimum position is found the position cannot be altered even when circumstances change. It is the capability, not the intent at any fixed point in time, which matters. Two things screwed together are designed to be removed or adjusted as long as they have the capability of being removed or adjusted. Whether or not they are actually removed or adjusted, or whether such removal or adjustment is desirable at any particular time, is irrelevant. As noted in *Dorel*, "the claim language does not require that the seat and base come apart during normal use." *Id.* 429 F.3d at 1045, 77 USPQ.2d at 1092.

Furthermore, the recesses along slot (56) in the Le Deit, et al device only set the desired *rotational* position of cable support (44). Nothing prevents the adjustment of cable support (44) in the direction of the rotational axis. In other words, screw (60) could be loosened or removed, and then washers or shims could be placed beneath cable support (44), thereby adjusting the position of

cable support (44) upwardly from the page. The fact that Le Deit, et al does not expressly discuss such an adjustment does not make such adjustment impossible or undesirable.

**Claim 73**

Claim 73 recites “wherein the cable support extends from a surface of the caliper housing and is not removable relative to the surface of the caliper housing.” Once again, the final office action takes a “frozen in time” interpretation of Le Deit, et al at pages 8 and 9 of the office action in that only the state of the Le Deit, et al structure as it appears in the drawings is taken into account.

As noted above, the Appellants adopted the *Dorel* rationale such that “removable” means “designed at some time or another to be removed.” Thus, it cannot be maintained that the Le Deit, et al cable support is not removable simply because it is screwed together as shown in the drawings of the patent.

**Claim 74**

Claim 74 recites, *inter alia*, “wherein the cable support extends from a surface of the caliper housing and is not adjustable relative to the surface of the caliper housing.” The final office action, on page 4, takes the position that Le Deit, et al shows only one optimal position for a cable support (44). Consequently, according to the office action, cable support (44) is not adjustable relative to the caliper housing, for otherwise the cable support would be removed from this optimal position.

As noted above, the term “adjustable” in the relevant claims means “designed at some time or another to be adjusted.” Thus, it cannot be maintained that the Le Deit, et al cable support is not adjustable or removable simply because it is screwed together as shown in the drawings of the patent. Furthermore, it cannot be said that once an optimum position is found the position cannot be altered even when circumstances change. It is the capability, not the intent at any fixed point in time, which matters. Two things screwed together are designed to be removed or adjusted as long as they have the capability of being removed or adjusted. Whether or not they are actually removed or adjusted, or whether such removal or adjustment is desirable at any particular time, is irrelevant. As

noted in *Dorel*, “the claim language does not require that the seat and base come apart during normal use.” *Id.* 429 F.3d at 1045, 77 USPQ.2d at 1092.

Furthermore, the recesses along slot (56) in the Le Deit, et al device only set the desired *rotational* position of cable support (44). Nothing prevents the adjustment of cable support (44) in the direction of the rotational axis. In other words, screw (60) could be loosened or removed, and then washers or shims could be placed beneath cable support (44), thereby adjusting the position of cable support (44) upwardly from the page. The fact that Le Deit, et al does not expressly discuss such an adjustment does not make such adjustment impossible or undesirable.

Claim 74 further recites “wherein the cable support is one piece with the surface of the caliper housing from which it extends.” One piece means one piece. One piece does not mean two pieces bolted together, nor is such an interpretation reasonable.

**Rejection under 35 U.S.C. §103(a) over Le Deit, et al in view of Carre, et al, Huang and Isai.**

**Claims 55-59**

It is submitted that claims 55-59 derive patentability from the claims from which they depend.

**Rejection under 35 U.S.C. §103(a) over Le Deit, et al in view of Carre, et al, Huang, Isai, and Mott.**

**Claim 60**

It is submitted that claim 60 derives patentability from the claims from which it depends.

Respectfully submitted,

  
James A. Deland  
Reg. No. 31,242

DELAND LAW OFFICE  
P.O. Box 69  
Klamath River, California 96050  
530-465-2430

**VIII. CLAIMS APPENDIX**

CLAIM 37. A cable disc brake for a bicycle comprising:  
a caliper housing with a mounting bracket structured and dimensioned to be attached to a bicycle and with a cable support having an opening for guiding a cable therethrough;  
wherein the cable support extends from a surface of the caliper housing and is not adjustable in any direction relative to the surface of the caliper housing;  
a first friction member coupled to the caliper housing for movement between a release position and a braking position;  
a second friction member coupled to the caliper housing and arranged substantially parallel to the first friction member to form a rotor receiving slot therebetween; and  
an actuated mechanism movably coupled to the caliper housing to move the first friction member in an axial direction from the release position towards the second friction member to the braking position;  
wherein the actuated mechanism comprises an elongated actuating arm rotatably coupled to the caliper housing to cause the actuated mechanism to move the first friction member from the release position towards the braking position;  
wherein the actuating arm has a curved guide surface with a first portion coincident with a cable clamp and a second portion that extends from the first portion towards the cable support so that the cable, when coupled to the cable clamp, approaches the guide surface from the opening in the cable support essentially tangent to the guide surface and is supported by the guide surface when the first friction member is in the release position.

CLAIM 38. A cable disc brake according to claim 37 wherein the second portion of the guide surface is formed by a projection that forms a circumferentially elongated protuberance that points in a rotational direction of the actuating arm towards the cable support where the cable passes through the cable support such that the cable is supported on and by the protuberance.

CLAIM 39. A cable disc brake according to claim 38 wherein the projection has a radially outer portion that extends towards the cable support and a radially inner portion that extends away from the cable support back towards a side surface of the actuating arm.

CLAIM 40. A cable disc brake according to claim 39 wherein the projection is disposed in close proximity to a radially outermost portion of the actuating arm.

CLAIM 41. A cable disc brake according to claim 37 further comprising a biasing mechanism that applies a biasing force between the caliper housing and the actuating arm.

CLAIM 42. A cable disc brake according to claim 41 wherein the biasing mechanism comprises a spring.

CLAIM 43. A cable disc brake according to claim 41 further comprising an adjusting mechanism that adjusts the biasing force applied between the caliper housing and the actuating arm in addition to changes of biasing force caused by rotation of the actuating arm relative to the caliper housing.

CLAIM 44. A cable disc brake according to claim 43 wherein the biasing mechanism comprising a spring having a first end and a second end, and wherein the adjusting mechanism adjusts the biasing force by moving one of the first end and the second end relative to the other one of the first end and the second end.

CLAIM 45. A cable disc brake according to claim 44 wherein the first end of the spring is coupled relative to the caliper housing at a first position, and wherein the adjusting mechanism adjusts the biasing force by coupling the first end of the spring relative to the caliper housing at a second position different from the first position.

CLAIM 46. A cable disc brake according to claim 44 wherein the second end of the spring is coupled relative to the actuating arm at a first position, and wherein the adjusting mechanism adjusts the biasing force by coupling the second end of the spring relative to the actuating arm at a second position different from the first position.

CLAIM 47. A cable disc brake according to claim 37 further comprising a cable adjusting bolt fitted within the opening in the cable support through which the cable passes.

CLAIM 48. A cable disc brake according to claim 37 wherein the caliper housing includes a mounting flange for mounting the caliper housing to the bicycle, and wherein the mounting flange includes a slot that allows adjustment of the caliper housing to and from the rotor such that the caliper housing is axially fixed relative to the rotor during operation of the actuating arm.

CLAIM 49. A cable disc brake according to claim 37 wherein the actuating arm rotates around a rotational axis, wherein the caliper housing includes a mounting flange for mounting the caliper housing to the bicycle, and wherein the mounting flange includes an opening for receiving a mounting bolt therethrough substantially perpendicular to the rotational axis.

CLAIM 50. A cable disc brake according to claim 37 wherein the actuating arm rotates around a rotational axis, and wherein the caliper housing includes:

a first mounting flange with a first opening for mounting the caliper housing to the bicycle;  
a second mounting flange with a second opening for mounting the caliper housing to the bicycle;

wherein the first opening is disposed above the rotational axis; and  
wherein the second opening is disposed below the rotational axis.

CLAIM 51. A cable disc brake according to claim 50 wherein the caliper housing is structured such that, when the caliper housing is mounted to a front fork of the bicycle, the cable support is disposed above the rotational axis.

CLAIM 52. A cable disc brake according to claim 51 wherein the caliper housing is structured such that, when the caliper housing is mounted to the front fork of the bicycle, the guide surface is disposed rearwardly of the rotational axis.

CLAIM 53. A cable disc brake according to claim 52 wherein the caliper housing is structured such that, when the caliper housing is mounted to the front fork of the bicycle, the cable support extends rearwardly of the rotational axis.

CLAIM 54. A cable disc brake according to claim 37 wherein the cable, when coupled to the cable clamp, approaches the guide surface from the opening in the cable support essentially in a straight line.

CLAIM 55. A cable disk brake according to claim 37 further comprising a torsion spring that applies a torsion force to the actuating arm relative to the caliper housing to bias the actuating arm to a brake releasing position.

CLAIM 56. A cable disc brake according to claim 55 wherein the torsion spring has an end coupled to the actuating arm.

CLAIM 57. A cable disc brake according to claim 55 wherein the torsion spring is adjustably coupled to the caliper housing.

CLAIM 58. A cable disc brake according to claim 55 wherein the torsion spring has a first end adjustably coupled to the caliper housing and a second end fixed relative to the actuating arm.

CLAIM 59. A cable disc brake according to claim 58 wherein the second end of the torsion spring is directly connected to the actuating arm.

CLAIM 60. A cable disc brake according to claim 58 wherein the caliper housing has a plurality of openings so that the first end of the torsion spring is selectively inserted into one of the plurality of openings to adjust the first end relative to the caliper housing.

CLAIM 69. A cable disk brake according to claim 37 wherein the cable support is one piece with the surface of the caliper housing from which it extends.

CLAIM 70. A cable disk brake according to claim 69 wherein the cable support comprises an elongated member.

CLAIM 71. A cable disk brake according to claim 70 wherein the elongated member forms the opening such that the opening for guiding the cable is immovable relative to the surface of the caliper housing.

CLAIM 72. A cable disc brake for a bicycle comprising:  
a caliper housing with a mounting bracket structured and dimensioned to be attached to a  
bicycle and with a cable support having an opening for guiding a cable therethrough;  
wherein the cable support extends from a surface of the caliper housing and is not adjustable  
at any time relative to the surface of the caliper housing;  
a first friction member coupled to the caliper housing for movement between a release  
position and a braking position;  
a second friction member coupled to the caliper housing and arranged substantially parallel  
to the first friction member to form a rotor receiving slot therebetween; and  
an actuated mechanism movably coupled to the caliper housing to move the first friction  
member in an axial direction from the release position towards the second friction member to the  
braking position;  
wherein the actuated mechanism comprises an elongated actuating arm rotatably coupled to  
the caliper housing to cause the actuated mechanism to move the first friction member from the  
release position towards the braking position;  
wherein the actuating arm has a curved guide surface with a first portion coincident with a  
cable clamp and a second portion that extends from the first portion towards the cable support so that  
the cable, when coupled to the cable clamp, approaches the guide surface from the opening in the  
cable support essentially tangent to the guide surface and is supported by the guide surface when the  
first friction member is in the release position.

CLAIM 73. A cable disc brake for a bicycle comprising:  
a caliper housing with a mounting bracket structured and dimensioned to be attached to a  
bicycle and with a cable support having an opening for guiding a cable therethrough;  
wherein the cable support extends from a surface of the caliper housing and is not removable  
relative to the surface of the caliper housing;  
a first friction member coupled to the caliper housing for movement between a release  
position and a braking position;  
a second friction member coupled to the caliper housing and arranged substantially parallel  
to the first friction member to form a rotor receiving slot therebetween; and

an actuated mechanism movably coupled to the caliper housing to move the first friction member in an axial direction from the release position towards the second friction member to the braking position;

wherein the actuated mechanism comprises an elongated actuating arm rotatably coupled to the caliper housing to cause the actuated mechanism to move the first friction member from the release position towards the braking position;

wherein the actuating arm has a curved guide surface with a first portion coincident with a cable clamp and a second portion that extends from the first portion towards the cable support so that the cable, when coupled to the cable clamp, approaches the guide surface from the opening in the cable support essentially tangent to the guide surface and is supported by the guide surface when the first friction member is in the release position.

CLAIM 74. A cable disc brake for a bicycle comprising:

a caliper housing with a mounting bracket structured and dimensioned to be attached to a bicycle and with a cable support having an opening for guiding a cable therethrough;

wherein the cable support extends from a surface of the caliper housing and is not adjustable relative to the surface of the caliper housing;

wherein the cable support is one piece with the surface of the caliper housing from which it extends;

a first friction member coupled to the caliper housing for movement between a release position and a braking position;

a second friction member coupled to the caliper housing and arranged substantially parallel to the first friction member to form a rotor receiving slot therebetween; and

an actuated mechanism movably coupled to the caliper housing to move the first friction member in an axial direction from the release position towards the second friction member to the braking position;

wherein the actuated mechanism comprises an elongated actuating arm rotatably coupled to the caliper housing to cause the actuated mechanism to move the first friction member from the release position towards the braking position;

wherein the actuating arm has a curved guide surface with a first portion coincident with a cable clamp and a second portion that extends from the first portion towards the cable support so that the cable, when coupled to the cable clamp, approaches the guide surface from the opening in the cable support essentially tangent to the guide surface and is supported by the guide surface when the first friction member is in the release position.

**IX. EVIDENCE APPENDIX**

- 1) U.S. Patent No. 4,582,177 issued to Carre, et al on April 15, 1986 and entered into the record by the examiner in the office action dated August 17, 2005.
- 2) U.S. Patent No. 5,201,402 issued to Mott on April 13, 1993 and entered in the record by the examiner in the office action dated August 17, 2005.
- 3) U.S. Patent No. 5,697,475 issued to Le Deit on December 16, 1997 and entered in the record by the examiner in the office action dated August 17, 2005.
- 4) U.S. Patent No. 5,960,914 issued to Isai on October 5, 1999 and entered into the record by the examiner in the office action dated August 17, 2005.
- 5) U.S. Patent No. 6,148,964 issued to Huang on November 21, 2000 and entered into the record by the examiner in the office action dated August 17, 2005.
- 6) Response to Office Action filed on April 26, 2007 and entered into the record by the examiner in the office action dated May 11, 2007.
- 7) Response to Office Action filed on July 9, 2007 and entered into the record by the examiner in the office action dated September 28, 2007.

**X. RELATED PROCEEDINGS APPENDIX**

**None**